A Blueprint for Learning
Science
Sixth Grade

The ***Blueprint for Learning*** is a companion document for the Tennessee Curriculum Standards which are located at www.tennessee.gov/education. Although the curriculum adopted by the State Board of Education in its entirety remains on the web for additional reference, this reformatted version makes the curriculum more accessible to classroom teachers.

Key features of the reformatted version are:

- All grades for each content area are provided in the printed manual.
- The skills within each grade are identified as to whether they are introduced, developed, or have been mastered and are now being maintained at that level.
- The skills correlating with the state criterion referenced test (CRT) are also identified for classroom instruction.
- In the Language Arts section, the assessed skills (performance indicators) are identified not only for the state's CRT in grades 3-8 but also for the writing assessment in grades 5 and 8.
- This guide makes the planning of instruction for students with varying abilities easier to accomplish.
- Teachers can plan and work together to improve school wide student achievement through curriculum integration across content areas and grade levels.
- Teachers can identify current grade level skills as well as those needed to prepare students for the next year.

Skills are coded and identified as Introduced (I), Developing (D), State CRT and Writing Assessed (A), and Mastered and Maintained (M).

- Introduced (I) skills are new skills presented at that grade level. Even though a skill is considered introduced at a grade level, some development would also occur.
- Developing (D) skills are skills that have been introduced at a previous grade level. At this stage of development the skills are being refined and expanded.
- Assessed (A) skills are those skills that are correlated to the state performance indicators for the CRT portion of the achievement test (grades 3-8) and the writing assessment (grades 5 and 8). The identified skills are formally assessed through the CRT; however, all skills are informally assessed in the classroom.
    - For the purpose of data reporting, assessed (A) skills are grouped into categories indicating related skills and knowledge. For example, grammar, mechanics, and usage are grouped together under the grammar (G) category. Each state assessed indicator included on the Blueprint carries a legend showing that it is assessed and indicating the category in which it will be reported (e.g., Assessed/Grammar=A/G).
- Mastered and Maintained (M) indicates a skill that has been introduced, developed, and assessed. Even though a skill may be formally assessed, the development and expansion of the skill still continues.

KEY
I = Introduced D = Developing A = State Assessed M = Mastered

REPORTING CATEGORY
IL = Interaction & Environment FP = Food Production & Energy DA = Diversity & Adaptation
BC = Biological Change EU = Earth & Its Place in the Universe E = Energy

Note: "A" indicates the state curriculum (CRT) assessment only.
All the skills ("I"…"D"…"A"…"M") are addressed in the classroom assessment.

SCIENCE
Sixth Grade

LIFE SCIENCE STANDARDS

Interactions Between Living Things and Their Environment

The student will investigate how living things interact with one another and with nonliving elements of their environment.

Key	Reporting Category	
A	**IL**	Distinguish between commensalism, parasitism, and mutualism.
D		Distinguish between predators and prey.
A	**IL**	Recognize how animals and plants are interdependent.
A	**IL**	Predict whether an organism can survive in a particular ecosystem.
D		Interpret how humans impact ecosystems.

Food Production and Energy for Life

The student will study the basic parts of plants, investigate how plants produce food, and discover that plants and animals use food to sustain life.

D		Classify organisms as producers, consumers, or decomposers.
A	**FP**	Identify how organisms obtain food for energy.
A	**FP**	Classify organisms as producers, consumers, or decomposers in a food chain or food web.
D		Demonstrate interrelationships among organisms in a food chain or food web.
A	**FP**	Infer the consequences of a change in the population size of an organism in a food chain or food web.

Diversity and Adaptation Among Living Things

The student will understand that living things have characteristics that enable them to survive in their environment.

D		Explain how the relationship between the form and function of an organism is associated with survival in a given environment.
A	**DA**	Identify adaptations that enhance the survival of organisms in an environment.
A	**DA**	Determine which organisms are likely to survive in a particular environment.
A	**DA**	Classify plants and animals according to their features.

Biological Change

The student will understand that living things have changed over time.

A	**BC**	Analyze how fossils provide information about the past.
A	**BC**	Differentiate between the relative age of fossils in a sedimentary rock diagram.
I		Determine the geologic age of an object using a diagram or a time line.

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D		Identify additional lines of scientific evidence, other than fossils, that support the idea of change over time.
A	**BC**	Select additional lines of scientific evidence, other than fossils, that illustrate change over time.
D		Predict how a specific environmental change might affect the survival of a plant or animal species.
D		Evaluate possible causes of extinction.
A	**BC**	Identify factors that contribute to extinction.

EARTH SCIENCE STANDARDS

Earth and Its Place in the Universe

The student will investigate the structure of the universe.

D		Differentiate among the components of the universe.
A	**EU**	Categorize the components of the universe (i.e., stars, planets, comets, asteroids, and meteors).
A	**EU**	Differentiate between planets according to specific characteristics.
D		Construct a model of the solar system.
D		Illustrate the positions of the Earth, moon, and sun during solar and lunar eclipses.
D		Use a model to explain how the tilt of the Earth and its revolution around the sun causes the seasons.
A	**EU**	Distinguish between a day, month, and year based on the movements of the Earth, sun, and moon.
A	**EU**	Differentiate between a solar and a lunar eclipse.
A	**EU**	Select the diagram that reflects the Earth/sun relationship that accounts for the four seasons.
D		Identify the pull of gravity as the force that holds the planets and their moons in orbit.
A	**EU**	Identify the force that pulls objects toward the Earth.
I		Relate tidal conditions with the position of the moon.
A	**EU**	.Predict the type of tide produced by the different positions of the Earth and moon system.
I		Make use of available resources (internet, library, interviews, etc.) to research careers associated with technology and space exploration.

PHYSICAL SCIENCE STANDARDS

Energy

The student will investigate energy and its uses.

D		Recognize the basic parts of a wave.
A	**E**	Identify the wavelength, frequency, and amplitude of a wave.
D		Explain how the properties of sound are related to wavelength, frequency, and amptitude.
A	**E**	Predict the direction of heat flow between objects.
I		Explain the difference between the Fahrenheit and Celsius temperature scales.
D		Explain how magnets are involved in the production of electricity.
D		Distinguish among heat, chemical, electrical, and mechanical energy.

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I		Understand the law of conservation of energy.
A	**E**	Recognize a variety of energy transformations.
A	**E**	Infer the impact of nuclear power on humans and the environment.
D		Describe the electromagnetic spectrum.
A	**E**	Select examples of refraction, reflection, and absorption of light.
I		Compare incandescent and fluorescent light with respect to production and efficiency.

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